

**INTERNATIONAL SEARCH REPORT**

International application No.

PCT/US03/40295

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) : H01L 27/108  
US CL : 257/301, 752

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
U.S. : 257/301, 306, 752, 750, 753, 754, 758, 759, 760; 438/622, 623

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
NONE

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,335,98 B1 (Hsu et al.) 25 December 2001 (25.12.2001), fig. 24, column7, lines 48-50, column 9 line 5, column 14 lines 15-55	1-9
A	US 2003/0211724 A1 (Haase) 13 November 2003 (13.11.2003), see entire document.	1-9
A	US 2003/0165418 A1 (Ajayan et al.) 04 September 2003 (04.09.2003), see entire document.	1-9
A	US 2003/0100189 A1 (Lee et al.) 29 May 2003 (29.05.2003), see entire document.	1-9
A	US 2003/0179559 A1 (Engelhardt et al.) 25 September 2003 (25.09.2003), see entire document.	1-9
A	US 6,599,808 B2 (Kim et al.) 29 July 2003 (29.07.2003), see entire document.	1-9
A	US 6,340,822 B1 (Brown et al.) 22 January 2002 (22.01.2002), see entire document.	1-9
A	US 6,286,226 B1 (Jin) 11 September 2001 (11.09.2001), see entire document.	1-9
A	US 2002/0163079 A1 (Awano) 07 November 2002 (07.11.2002), see entire document.	1-9

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"B" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

21 April 2004 (21.04.2004)

Date of mailing of the international search report

06 AUG 2004

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## INTERNATIONAL SEARCH REPORT

## C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6,566,704 B2 (Choi et al.) 20 May 2003 (20.05.2003), see entire document.	1-9
A	US 6,548,313 B1 (Ravi et al.) 15 April 2003 (15.04.2003), see entire document.	1-9
A	US 2002/0167375 A1 (Hoppe et al.) 14 November 2002 (14.11.2002), see entire document.	1-9
A	US 2002/0125806 A1 (Hsu) 12 September 2002 (12.09.2002), see entire document.	1-9